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09/813,532	03/21/2001	Srinath Hosur	TI-30812	3579

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EXAMINER	
PATHAK, SUDHANSHU C	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/813,532
Filing Date: March 21, 2001
Appellant(s): HOSUR, SRINATH

Carlton H. Hoel
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 25th, 2005.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of invention contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Prior Art of Record

6,424,679	Dabak	7-2002

Lee, Dennis; "Antenna Diversity for an OFDM System in a Fading Channel"; IEEE Military Communications Conference Proceedings; 1999; Pages 1104-1109.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. ("Antenna Diversity for an OFDM System in a Fading Channel"; IEEE Military Communications Conference Proceedings; 1999; Pages 1104-1109) in view of Dabak et al. (6,424,679). This rejection is set forth in a prior Office Action, mailed on November 24th, 2004.

The rejections are hereby reproduced for convenience.

Claims 1 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (Antenna Diversity for an OFDM System in a Fading Channel, IEEE Military Communication Conference Proceeding, 1999, Pg. 1104-1109) in view of Dabak et al. (6,424,679).

Regarding to Claims 1 & 7, Lee discloses a method of transmission comprising transmitting a multiple sets of "N" symbols, where "N" is an integer greater than 1, on "N" subcarriers using a Orthogonal Frequency Division Multiplexing scheme (Abstract, lines 1-7, Pg. 1104 & Introduction, lines 1-31). However, Lee does not disclose providing "M-1" transformations of the set of "N" symbols, and transmitting the set of "N" symbols from the first antennas and transmitting the "M-1" transformations of set of "N" symbols on "N" subcarriers from a corresponding one of "M-1" antennas.

Dabak discloses a transmission method using Space Time Transit Diversity (STTD) in a spread spectrum communication system (Column 1, lines 15-67 & Column 3, lines 55-67). Dabak also discloses implementing antenna diversity in the

spread spectrum communications system (Column 1, lines 10-15 & Column 2, lines 6-30 & Fig. 2, elements 204, 206). Dabak further discloses providing transformations of the set of symbols and further transmitting each of the transformations of the symbols on subcarriers from corresponding antennas (Fig. 1 & Fig. 2 & Abstract, lines 1-10 & Column 3, lines 55-67 & Column 4, lines 1-35 & Claim 1 & Claims 6-to-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Dabak teaches implementing transforming the input symbols before transmitting the transformed symbols and the non-transformed symbols on respective antennas in a spread spectrum communication system, and this can be implemented in the OFDM communication system as described in Lee so as to increase the diversity and BER performance of the communication system.

(10) Response to Argument

Regarding to Claims 1& 7 Lee discloses an OFDM system comprising a receiver diversity antenna system i.e. multiple receiver antennas implemented in a wireless communication scheme. However, Lee does not specify a transmit diversity scheme i.e. multiple transmitter antennas implemented in the communication scheme. However, Dabak discloses a space time block coded transmit antenna diversity for a WCDMA (spread spectrum communication systems) multiple access communication system (Column 1, lines 15-67 & Column 2, lines 1-40). Dabak also discloses transmit diversity in a TDMA wireless communication system (Column 1, lines 15-67 & Column 2, lines 1-40). Therefore, it would have been obvious to one of ordinary skill in the art at

the time of the invention that Dabak teaches implementing Transmit diversity (STTD) on various different multiple access schemes in a wireless communications system, and this can also be implemented in the OFDM system as described in Lee so as to improve the performance of the communication system against fading, particularly at low Doppler rates, and increase the BER performance in a high fading environment (Column 2, lines 5-25 & Column 5, lines 10-30). Furthermore, the Examiner relies upon Lee for the OFDM, which discloses receiver antenna diversity; this can also be considered transmitter diversity since the mobile station in a wireless communication system also transmits through the same antenna system, thus providing transmitter antenna diversity and Dabak et al. (6,424,679) for explicitly disclosing transmitter space time diversity.

For the above reasons, it is believed that the rejections should be sustained.

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